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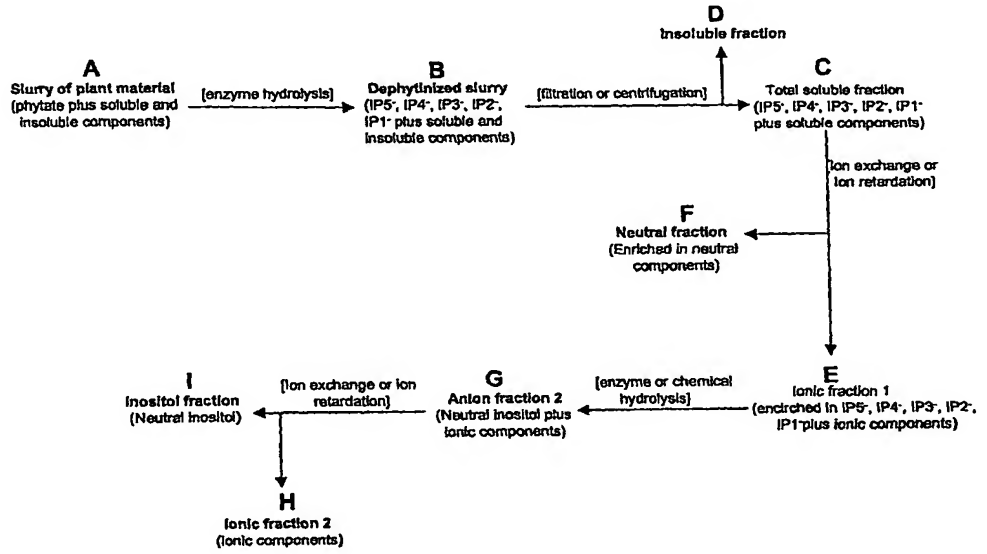
[Continued on next page]

(54) Title: ISOLATION OF INOSITOL FROM PLANT MATERIALS



(57) Abstract: Phytate and/or phytin and/or phytic acid in an aqueous slurry of plant mateiral is partially hydrolyzed by incubating the slurry with an enzyme product enriched in phytase. The soluble fraction of the slurry is separated into anionic and neutral fractions. The anionic fraction is then hydrolyzed further, and the hydrolyzate is separated into second ionic and neutral fractions. The second neutral fraction thus obtained is rich in inositol, and does not contain significant quantities of other sugars which would be hard to separate from it.

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 03/01849

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12P7/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, CHEM ABS Data, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 156 563 A (KAMPEN WILLEM H) 5 December 2000 (2000-12-05) see especially col. 3 and the claims the whole document ---	1-11
X	PATENT ABSTRACTS OF JAPAN vol. 0172, no. 36 (C-1057), 13 May 1993 (1993-05-13) -& JP 04 365489 A (MITSUI TOATSU CHEM INC), 17 December 1992 (1992-12-17) the whole document --- -/--	1-11

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Douschan, K

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International Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KAUFMAN H. W. AND KLEINBERG I.: "Hydrolysis of Phytate and its Inositol Phosphate Intermediates by an Acid and an Alkaline Phosphatase." ARCHS ORAL BIOL., vol. 20, 1975, pages 157-160, XP000902746 the whole document	1-11
A	LIM P E ET AL: "THE PHYTASES II. PROPERTIES OF PHYTASE REACTIONS F1 AND F2 FROM WHEAT BRAN AND THE MYO-INOSITOL PHOSPHATES PRODUCED BY FRACTION F2" BIOCHIMICA ET BIOPHYSICA ACTA, AMSTERDAM, NL, vol. 302, no. 2 E43, 1973, pages 316-328, XP000972485 ISSN: 0006-3002 the whole document	1-11
A,P	MULLANEY E J ET AL: "The term phytase comprises several different classes of enzymes" BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, ACADEMIC PRESS INC. ORLANDO, FL, US, vol. 312, no. 1, 5 December 2003 (2003-12-05), pages 179-184, XP004473248 ISSN: 0006-291X the whole document	1-11
A	DATABASE CHEMABS 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; 1998 PIZZOFERRATO, L. ET AL PIZZOFERRATO, L. ET AL: "31P NMR spectra of myo- inositol phosphates in model systems and foods 31P NMR spectra of myo- inositol phosphates in model systems and foods" Database accession no. 1998:145617 XP000227293 abstract & CURRENT STATUS AND FUTURE TRENDS IN ANALYTICAL FOOD CHEMISTRY, PROCEEDINGS OF THE EUROPEAN CONFERENCE ON FOOD CHEMISTRY, 8TH, VIENNA, SEPT. 18-20, 1995 , VOLUME 3, 644-647. EDITOR(S): SONTAG, GERHARD; PFANNHAUSER, WERNER. PUBLISHER: AUSTRIAN CHEMICA, 1995,	1-11

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 03/01849

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,P	CHEN Q-C ET AL: "Separation of phytic acid and other related inositol phosphates by high-performance ion chromatography and its applications" JOURNAL OF CHROMATOGRAPHY A, ELSEVIER SCIENCE, NL, vol. 1018, no. 1, 7 November 2003 (2003-11-07), pages 41-52, XP004463107 ISSN: 0021-9673 the whole document	1-11

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/CA 03/01849

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6156563 A	05-12-2000	NONE	
JP 04365489 A	17-12-1992	NONE	